



**REMARKS**

Claims 1-8 are all the claims pending in the application.

**I. Rejection of Claims 1-3 and 6 under 35 U.S.C. § 103(a)**

Claims 1-3 and 6 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sueyoshi et al. (JP 4-0308137) in view of Ogawa et al. (U.S. Patent 4,135,016).

Applicants respectfully traverse the rejection.

The present invention according to claim 1 is a method for producing a magnetic recording medium having a nonmagnetic substrate coated with a magnetic coating material containing a ferromagnetic powder and a binder, comprising: preparing a liquid A constituted by a ferromagnetic powder and a solvent; preparing a solution B of a binder; mixing the liquid A and the solution B together by applying an ultrasonic wave thereto, and thereafter subjecting the mixture to dispersion processing to obtain a magnetic coating material; and coating a nonmagnetic substrate with the magnetic coating material. The present invention according to claim 6 is a method for producing a magnetic recording medium having a nonmagnetic substrate coated with a magnetic coating material containing a ferromagnetic powder and a binder, comprising: preparing a liquid A constituted by a ferromagnetic powder and a solvent; preparing a solution B of a binder; subjecting the liquid A to dispersion processing by applying an ultrasonic wave thereto, and thereafter mixing the liquid A and the solution B together to obtain a magnetic coating material; and coating a non-magnetic substrate with the magnetic coating material.

The present invention and Sueyoshi have common a problem to be solved and relate to a solution constituting a magnetic material and a dispersed solvent, where the dispersed

solution is mixed with a solution of binder to improve dispersibility of the magnetic material. However, there are fundamental differences between the present invention and Sueyoshi with respect to the method of dispersing a solution containing magnetic material and solvent and the method of mixing a solution constituting a magnetic material and solvent with a solution of a binder.

In Sueyoshi, the degree of dispersion is about tenth to hundredth part of the present invention. Sueyoshi uses a rotary type dispersing machine (homo-mixer) and bead mill dispersing for dispersing a solution constituting a magnetic material and solvent. In contrast, in the present invention, a rotary type dispersing machine and an ultrasonic wave dispersing machine are used.

According to the method of Sueyoshi, since breakup of secondary coagulation of magnetic material is promoted by bead mill dispersing and recoagulation occurs at the same time, it is difficult to perform uniform coating of a solution of binder to surface of a magnetic material even by directly mixing the solution of binder to the dispersed solution of a magnetic material and solvent. As is known from the embodiment of Sueyoshi, in which kneading processing is performed after drying, the invention of Sueyoshi is essentially an invention in which absorption of the solution of binder in the kneading processing is improved by an effect of once wetting the dispersed solution by the solvent.

In the method of the present invention, not a bead mill dispersing, but stirring by a stirrer and an ultrasonic wave dispersing are used for dispersing the solution constituting the magnetic material and the solvent. According to the methods of the present invention, high dispersing stability of the dispersed solution of the magnetic material and the solvent is

sustained since secondary coagulation of the magnetic material is broken into a scale of submicron by the ultrasonic wave dispersing, and a steric barrier of air is formed by cavitation of the ultrasonic wave. After the solution of the binder is mixed with the dispersed solution using ultrasonic wave, coating of the magnetic material and the binder can efficiently be performed because particles of magnetic material with a particle size on a submicron scale uniformly exist in the solution, thereby a dispersed magnetic solution with high dispersibility and high dispersing stability can be produced.

As noted above and recognized by the Examiner, Sueyoshi does not use an ultrasonic wave dispersing machine. The Examiner takes the position that it would have been obvious to one of ordinary skill in the art to use ultrasonic mixing in the process of Sueyoshi because Ogawa teaches functional equivalence to other types of mixing.

Applicants respectfully disagree, and submit that there is no motivation to combine Sueyoshi and Ogawa.

In an obviousness rejection, there must be some teaching or suggestion in the prior art regarding the desirability of a modification or combination. In this case, there is no such motivation.

At column 15, lines 15-22, Ogawa simply discloses an ultrasonic wave dispersing apparatus as one kind of kneader apparatus. That is, Ogawa discloses fifteen (15) types of kneaders. However, there is nothing in Ogawa that would motivate one of ordinary skill in the art to specifically select and use an ultrasonic wave dispersing machine from the various kneaders disclosed. Thus, one of ordinary skill in the art must select an ultrasonic wave dispersing machine from among the 15 types of kneaders, and modify the invention of Sueyoshi

by using the ultrasonic wave dispersing machine to arrive at the claimed invention. Such picking and choosing of a particular kneader to arrive at the claimed subject matter is improper.

For the above reasons, it is respectfully submitted that a *prima facie* case of obviousness has not been established, and withdrawal of the rejection is respectfully requested.

**II. Rejection of Claims 4-5 and 7-8 under 35 U.S.C. § 103(a)**

Claims 4 and 7 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sueyoshi in view of Ogawa, and further in view of Ikeuchi.

In addition, claims 5 and 8 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sueyoshi in view of Ogawa, and further in view of Akashi et al.

Applicants respectfully traverse the rejections.

Initially, it is submitted that claims 4-5 and 7-8 depend from claims 1 and 6, and thus, these claims are patentable for at least the same reasons as claims 1-3 and 6, discussed above.

In addition, one of ordinary skill in the art would not expect the effects of the present invention based on the disclosures of the cited references.

Generally, when particles are granular, the distance between the particles can uniquely be calculated when a particle size and % (ratio) by volume in a solution are determined. "How long the distance between the particles thus calculated is" - is an important factor which determines dispersing stability (re-coagulation). However, in the invention of Sueyoshi, it appears that the distance between the particles is longer than in the present invention because the magnetic material having a particle size of 0.2  $\mu\text{m}$  (example) is used and a solid concentration of a solution constituting the magnetic material and the solvent is 17.24 wt%. That is, even if particle size and shape of the magnetic material are disclosed in Ikeuchi and

Akashi, unless particle size and concentration in the solution by volume of magnetic material are disclosed in Sueyoshi, the effect of the present invention cannot be expected.

In a case where fine particles of magnetic material are produced by the method of the present invention, the distance between the particles is short, and therefore a quasi-stabilized state of the solution can be achieved in a state of secondary coagulation of submicron scale.

In sum, it is submitted that the present invention could not easily be achieved based on Sueyoshi and the secondary references by one of ordinary skill in the art.

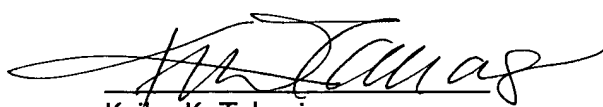
In view of the above, withdrawal of the rejection is respectfully requested.

**II. Conclusion**

For the forgoing reasons, reconsideration and allowance of claims 1-8 is respectfully requested.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below. The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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